EFFECT OF THE TOPICAL ADMINISTRATION OF DICLOFENAC SODIUM AND INDOMETHACIN ON CORNEAL SENSITIVITY IN NORMAL SUBJECTS.

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Purpose. Goal of this paper is to compare the effect on corneal sensitivity of two non steroidal anti-inflammatory drugs, such as Diclofenac sodium and Indomethacin, used topically for the treatment of ocular inflammations.
Methods. Three groups, each of 15 of healthy volunteers were included in the study: Group 1, treated with saline; Group 2, treated with Diclofenac; Group 3, treated with Indomethacin.
The eye drops were instilled 4 times with a 5 minutes interval and the ocular surface was studied, with fluorescein, before the drug instillation and 5 minutes after the last drop was instilled. After two days the drugs were instilled again, as preaviously described and the corneal sensitivity measurement was performed before the drug instillation and 5, 15, 30 and 60 minutes after the last drop instillation, using the Cochet-Bonnet aesthesiometer.
The statistical analysis of results was performed using the analysis of variance.
Results. No signs of epithelial sufference were found either before or after the drugs instillation in the 3 groups. The corneal sensitivity was not modified in groups 1 and 3, while the Diclofenac treated group showed a statistically significant reduction starting 15 minutes after the instillation of the last drop and lasting throughout the period of the study. Even the comparison with the results of groups 1 and 3 showed a significant reduction of corneal sensitivity after 15, 30 and 60 minutes from the instillation of the last drop.
Conclusions. Both Diclofenac and Indomethacin have an anti-inflammatory effect mediated by the inhibition of the cyclo-oxigenase pathway of the arachidonic acid metabolism. The anesthetic effect shown by Diclofenac could be due to a different mechanism of action, being Indomethacin not able to induce such an effect.
Although the corneal anesthesia induced by Diclofenac can be useful in reducing the pain and discomfort due to ocular inflammations and surgery, more studies are needed to determine whether, in chronic treatments, the anesthetic effect could be responsible either of a neurotrophic epitheliopathy or of a reduction in the healing time of the corneal epithelium, after sugical procedures.

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COMPARISON OF THE EFFICACY OF DIFFERENT TOPICAL NON-STEROIDAL DROPS AS PAIN RELIEF FOLLOWING EXCIMER LASER P.R.K.

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Purpose To compare the efficacy of topical indomethicin, diclofenac and ketorolac as pain relief following excimer laser P.R.K..
Methods Double masked, randomised trial involving 360 patients. All patients received a standard regime of one of the trial drugs and chloramphenicol ointment to be used four times daily for 3 days. Pain levels were assessed on a 10cm linear analogue scale prior to each instillation of the topical medication. Patients were advised to use paracetamol as additional pain relief but were allowed to use any oral analgesia (except non-steroidal agents) which they documented (type and quantity). Quality of sleep was graded. A comparison of end refraction and haze levels is made.
Results There was no significant difference in pain scores between the groups using diclofenac and ketorolac. Ketorolac was significantly better than indomethicin for pain relief at hours 18 and 60 ($p<0.01$); while diclofenac was significantly better than indomethicin at hour 18 ($p<0.01$).
Conclusion In this study, there is no significant difference between topical ketorolac and diclofenac as pain relief following excimer laser P.R.K.. Both of these drugs are significantly better than topical indomethicin.